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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,689	08/11/2003	Yi-Chen Chang	10870-US-PA	1688

31561 7590 01/03/2007

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER	
BODDIE, WILLIAM	
ART UNIT	PAPER NUMBER
2629	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/604,689	CHANG ET AL.	
	Examiner	Art Unit	
	William L. Boddie	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *8/11/03* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In an amendment dated, October 17th, 2006, the Applicant traversed the rejections of claims 1-17. Currently claims 1-17 are pending.

Response to Arguments

2. Applicant's arguments filed October 17th, 2006 have been fully considered but they are not persuasive.

3. On pages 2-3 of the Remarks, the Applicant argues that the preamble of claim 1 should be given patentable weight. The Examiner respectfully disagrees.

The recitation "non-touch panel" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

The Applicant argues that the "non-touch panel" feature is needed to limit the structure to be without any additional protective film because there is no physical contact in the Applicant's invention. In response, the Examiner sees no reason why a non-touch panel device would expressly require the lack of a protective film. Would the non-touch panel be functional without a protective film? Yes, of course. However this fact alone does not require that a protective film be omitted. Therefore it is not clear as

to how the preamble recitation of a "non-touch panel input device" sufficiently limits the **structure** of the claimed invention.

4. Additionally, on page 3 of the Remarks, the Applicant argues that the Yanagisawa invention requires that the user touch the pen to the directly onto the panel. The Examiner respectfully disagrees.

While Yanagisawa can certainly function when the user touches the pen to the panel, it is not a requirement of operation. The 5th line of paragraph 76, states that "With this arrangement, **even when** the pen, which is input indicating means, is abutted, pressed, or rubbed against the surface of the coordinate plane." As shown here there are moments when the device does not require that the pen touch the plane.

5. On page 4 of the Remarks, the Applicant argues that pixel structure of Yanagisawa is different from that claimed in independent claim 1. Again the Examiner respectfully disagrees.

Specifically the Applicant argues that there is a one-to-one correspondence of sub-pixel matched with a shadow pixel, and this correspondence is not seen in Yanagisawa.

The Applicant is pointed to the current application's figure 7. In the bottom right corner of the array in figure 7, there is clearly not a one-to-one correspondence between sub-pixels and shadow pixels. Furthermore, the claim currently states that a pixel array comprises a "plurality of first pixel structures." There is no requirement that **every** pixel structure in the pixel array comprise a sub-pixel and a shadow pixel. As such

Yanagisawa is allowed to disclose additional pixel structures that do not require a shadow pixel.

6. The Applicant additionally argues, on page 4 of the Remarks, that the shadow pixels of Yanagisawa are not positioned on one side of the sub-pixel, and points to figure 6 of the current specification as an example of an intended claim scope. The Applicant's figure 6 is remarkably similar to Yanagisawa's figure 8. As such Yanagisawa's shadow pixels are seen as being positioned on one side of the sub-pixel.

7. The Applicant argues, on pages 5-6 of the Remarks, that Yanagisawa does not disclose a shadow pixel that is set to *emit* electromagnetic radiation.

First it should be noted that the Applicant has not claimed a *self*-emitting shadow pixel, merely a shadow pixel that is set to emit electromagnetic radiation. This is an important distinction.

Yanagisawa discloses in one embodiment dot array dots that are not self-emitting but do however, emit light incident on them. The light waves incident on the dots are either absorbed or reflected based on the color of the dot. The light which the input pen of Yanagisawa sees is only those select wavelengths of light which are reflected by the dot color. As such the light waves incident on the dot are not equivalent to the light waves seen by the input pen. It is the Examiner's opinion that this distinction offers enough to describe the dots of Yanagisawa as emitting electromagnetic radiation.

The Applicant is also pointed to an additional disclosure by Yanagisawa which is seen as supportive of this position in paragraph 111 of Yanagisawa. In this disclosure a

light-emitting element is not required in the input pen, instead either ambient light or "**light emitted by the display image itself**" is detected.

It should be noted that were the shadow pixels described as self-emitting this would overcome the disclosure of Yanagisawa. However, the Dougherty device very clearly discloses a self-emitting marker using photoluminescent ink (col. 5, lines 50-54).

8. On pages 6, 7, 9 and 10, the Applicant argues that the limitations of claims 2, 7, 9, 12, 14 and 17 require that the entire shadow pixel be made of a different material. The Applicant contrasts this with Yanagisawa which, it is argued, only contains a differently coated surface.

The Examiner again respectfully disagrees. First, even if Yanagisawa were merely placing a coating on an identical dot, it is simple enough to simply call the coating, alone, the "shadow pixel." Paragraph 103 of Yanagisawa which the Applicant relies to teach the alleged coating, never mentions coating. In fact, Yanagisawa fabricates the dots in a manner contrary to this. Paragraph 53, discloses using a printing technique to fabricate the dots. In this technique ink is ejected from a fine nozzle, as such there is never any mention of a different coating to achieve a different color. Different colors would therefore require different inks, thereby satisfying the requirement that the shadow pixels be fabricated using a different material amongst certain shadow pixels.

9. On pages 7 and 8, the Applicant traverses the rejection of claim 2 stating that Dougherty does not disclose a first shadow pixel set up in a non-transparent region of the pixel structure. Whether Dougherty discloses this or not is a non-issue.

Yanagisawa, and Yanagisawa alone, is used to disclose this feature of claim 1. Dougherty, as stated in the previous office action, is only cited in claim 2 for the disclosure of encoding data using a material capable of producing electromagnetic radiation in the invisible portion of the light spectrum. As such Dougherty is not required to disclose all the limitations of claim 1. If Dougherty had disclosed all these claims a 35 U.S.C. 102 rejection would have been proper. As this is not the case, a 35 U.S.C. 103 rejection has been made which combines the disclosures of the two pieces of prior art. The merits of the rejection are seen as sufficient and as such are maintained.

Furthermore, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

10. Finally on page 8, the Applicant argues that Dougherty's shadow pixels do not emit light. This is again not an issue as Dougherty is not looked to teach this limitation. However, it is worth bringing to the Applicant's attention Dougherty's disclosure of photoluminescent inks that are inherently self-emitting inks (col. 5, lines 50-54).

11. As shown above the rejections of claims 1-17 are seen as proper and are thus maintained.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 3-4, 6-8, 10-11 and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Yanagisawa et al. (US 2002/0046887).

With respect to claim 1, Yanagisawa discloses a pixel array (fig. 8 for example) for a non-touch panel input device (fig. 2), wherein the pixel array at least comprises a plurality of first pixel structures (32xi and 32xi+1 in fig. 8) with each pixel structure at least comprising: a sub-pixel (display pixel); and a first shadow pixel (each dot from the dot array is seen as a shadow pixel) set up in a non-transparent region of the pixel structure (para. 82) positioned on one side of the sub-pixel (clear from fig. 8).

With respect to claim 3, Yanagisawa discloses, the pixel array of claim 1 (see above), wherein the first shadow pixel is set to emit electromagnetic radiation either in a first electromagnetic radiation state or in a second electromagnetic radiation state such that the first and the second electromagnetic radiation states are different from each other (para. 103, disclose that the dot for a "0" can be a different color than the "1" dot, the use of different wavelengths is equivalent to different radiation states).

With respect to claim 4, Yanagisawa discloses, the pixel array of claim 3 (see above), wherein the first shadow pixel in the first electromagnetic radiation state has a length or width different from the first shadow pixel in the second electromagnetic radiation state (para. 102, discloses the use of different widths and/or lengths of dots to encode information).

With respect to claim 6, Yanagisawa discloses, the pixel array of claim 3 (see above), wherein the first electromagnetic radiation state radiates with a wavelength different from the second electromagnetic radiation state (para. 103, disclose that the dot for a "0" can be a different color than the "1" dot).

With respect to claim 7, Yanagisawa discloses, the pixel array of claim 3 (see above), wherein the first electromagnetic radiation state is fabricated using a material different from the second electromagnetic radiation state (para. 103; different colors for 0's and 1's would require different inks in order to radiate different wavelengths of light).

With respect to claim 8, Yanagisawa discloses the pixel array of claim 1 (see above), wherein each first pixel structure furthermore comprises a second shadow pixel positioned on the other side of the sub-pixel (clear from fig. 8, that there are "shadow pixels" (dots) on multiple sides of the display pixel).

With respect to claim 10, Yanagisawa discloses, the pixel array of claim 8 (see above), wherein the second shadow pixel is set to emit electromagnetic radiation either in a third electromagnetic radiation state or in a fourth electromagnetic radiation state such that the third and the fourth electromagnetic radiation states are different from each other (para .103, disclose that the dot for a "0" can be a different color than the "1" dot, the use of different wavelengths is equivalent to different radiation states).

With respect to claim 11, Yanagisawa discloses, the pixel array of claim 10 (see above), wherein the second shadow pixel in the third electromagnetic radiation state has a length or width different from the second shadow pixel in the fourth

electromagnetic radiation state (para. 102, discloses the use of different widths and/or lengths of dots to encode information).

With respect to claim 13, Yanagisawa discloses, the pixel array of claim 10 (see above), wherein the third electromagnetic radiation state radiates with a wavelength different from the fourth electromagnetic radiation state (para. 103, discloses that the dot for a "0" can be a different color than the "1" dot).

With respect to claim 14, Yanagisawa discloses, the pixel array of claim 10 (see above), wherein the third electromagnetic radiation state is fabricated using a material different from the fourth electromagnetic radiation state (para. 103; different colors for 0's and 1's would require different inks in order to radiate different wavelengths of light).

With respect to claim 15, Yanagisawa discloses, the pixel array of claim 1 (see above), wherein the pixel array furthermore comprises a plurality of second pixel structures (32yj, 32yj+1 in fig. 8) with each second pixel structure at least having a sub-pixel without a first shadow pixel (note the lack of y-direction dots in these structures) such that the sub-pixel in each second pixel structure is located in a position corresponding to the sub-pixel of the first pixel structure (seems clear from fig. 8 that the display pixels are located in the same position regardless of dot array used).

With respect to claim 16, Yanagisawa discloses, the pixel array of claim 15 (see above), wherein each second pixel structure furthermore comprises a second shadow pixel (x-direction dots in 32yj, 32yj+1) positioned on the other side of the sub-pixel corresponding to the second shadow pixel in the first pixel structure (56 in fig. 5c).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claims 2, 5, 9, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagisawa et al. (US 6,965,377) in view of Dougherty et al. (US 6,076,734).

With respect to claim 2, Yanagisawa discloses, the pixel array of claim 1 (see above), wherein the first shadow pixel is fabricated using a material capable of producing electromagnetic radiation (para. 82).

Yanagisawa does not expressly disclose, wherein the electromagnetic radiation is in the invisible portion of the light spectrum.

Dougherty discloses encoding data using a material capable of producing electromagnetic radiation in the invisible portion of the light spectrum (note IR1 in figs. 7 and 8, also col. 10, lines 33-45).

Dougherty and Yanagisawa are analogous art because they are both from the same field of endeavor namely, encoding information onto panel displays for sensing by a corresponding sensor.

At the time of the invention it would have been obvious to replace the dot color of Yanagisawa with the infrared color disclosed by Dougherty.

The motivation for doing so would have been to make the dots invisible to the user (Dougherty; col. 5, lines 35-37), thus not distracting the user from the image being displayed.

Therefore it would have been obvious to combine Dougherty with Yanagisawa for the benefit of dot invisibility to obtain the invention as specified in claim 2.

With respect to claim 5, Yanagisawa discloses, the pixel array of claim 3 (see above).

Yanagisawa does not expressly disclose, different reflectivities amongst the two radiation states.

Daugherty discloses, wherein the first electromagnetic radiation state has a reflectivity different from the second electromagnetic radiation state (col. 10, lines 16-32; discloses the measuring of the different reflected intensities of the different colored inks and using this measurement to decode the values).

At the time of the invention it would have been obvious to replace the dot color of Yanagisawa with the infrared color disclosed by Dougherty.

The motivation for doing so would have been to make the dots invisible to the user (Dougherty; col. 5, lines 35-37), thus not distracting the user from the image being displayed.

Therefore it would have been obvious to combine Dougherty with Yanagisawa for the benefit of dot invisibility to obtain the invention as specified in claim 5.

With respect to claim 9, Yanagisawa discloses, the pixel array of claim 8 (see above), wherein the first shadow pixel is fabricated using a material capable of producing electromagnetic radiation (para. 82).

Yanagisawa does not expressly disclose, wherein the electromagnetic radiation is in the invisible portion of the light spectrum.

Dougherty discloses encoding data using a material capable of producing electromagnetic radiation in the invisible portion of the light spectrum (note IR1 in figs. 7 and 8, also col. 10, lines 33-45).

Dougherty and Yanagisawa are analogous art because they are both from the same field of endeavor namely, encoding information onto panel displays for sensing by a corresponding sensor.

At the time of the invention it would have been obvious to replace the dot color of Yanagisawa with the infrared color disclosed by Dougherty.

The motivation for doing so would have been to make the dots invisible to the user (Dougherty; col. 5, lines 35-37), thus not distracting the user from the image being displayed.

Therefore it would have been obvious to combine Dougherty with Yanagisawa for the benefit of dot invisibility to obtain the invention as specified in claim 9.

With respect to claim 12, Yanagisawa discloses, the pixel array of claim 10 (see above).

Yanagisawa does not expressly disclose, different reflectivities amongst the two radiation states.

Daugherty discloses, wherein the third electromagnetic radiation state has a reflectivity different from the fourth electromagnetic radiation state (col. 10, lines 16-32; discloses the measuring of the different reflected intensities of the different colored inks and using this measurement to decode the values).

At the time of the invention it would have been obvious to replace the dot color of Yanagisawa with the infrared color disclosed by Dougherty.

The motivation for doing so would have been to make the dots invisible to the user (Dougherty; col. 5, lines 35-37), thus not distracting the user from the image being displayed.

Therefore it would have been obvious to combine Dougherty with Yanagisawa for the benefit of dot invisibility to obtain the invention as specified in claim 12.

With respect to claim 17, Yanagisawa discloses, the pixel array of claim 16 (see above), wherein the second shadow pixel is fabricated using a material capable of producing electromagnetic radiation (para. 82).

Yanagisawa does not expressly disclose, wherein the electromagnetic radiation is in the invisible portion of the light spectrum.

Dougherty discloses encoding data using a material capable of producing electromagnetic radiation in the invisible portion of the light spectrum (note IR1 in figs. 7 and 8, also col. 10, lines 33-45).

Dougherty and Yanagisawa are analogous art because they are both from the same field of endeavor namely, encoding information onto panel displays for sensing by a corresponding sensor.

At the time of the invention it would have been obvious to replace the dot color of Yanagisawa with the infrared color disclosed by Dougherty.

The motivation for doing so would have been to make the dots invisible to the user (Dougherty; col. 5, lines 35-37), thus not distracting the user from the image being displayed.

Therefore it would have been obvious to combine Dougherty with Yanagisawa for the benefit of dot invisibility to obtain the invention as specified in claim 17.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William L. Boddie whose telephone number is (571) 272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Wlb
12/19/06

AMR A. AWAD
SUPERVISORY PATENT EXAMINER